

Notice of Allowability

Application No.

10/800,974

Examiner

Theresa Trieu

Applicant(s)

FUJIWARA, TAKAYOSHI

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

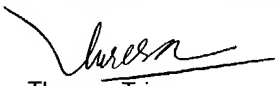
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date August 4, 2004.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date March 16, 2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 08/04/04.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Theresa Trieu
Patent Examiner
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EXAMINER'S AMENDMENT

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "helical grooves of the respective operation sections have winding pitch" recited in claim 6, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Jeffrey Karceski (Reg. No. 35,914) on August 5, 2004. During telephone conversation with Mr. Karceski, an agreement was reached to amend the Specification and the abstract.

The application has been amended as follows:

In the Abstract:

The entire abstract has been replaced with --

A fluid machinery includes a helical mechanism connected to a driving mechanism, which is driven via a crank shaft. The helical mechanism includes a cylinder defining an inner space, a roller disposed inside the cylinder so as to be rotated in an eccentric manner, the roller being formed with a plurality of helical grooves on an outer peripheral surface, and at least one seal ring groove between respective helical grooves, a plurality of helical blades fitted to the helical grooves so as to be disposed between an inner peripheral surface of the cylinder and the outer peripheral surface of the roller, and at least one seal ring fitted to the seal ring groove so as to tightly seal the inner space as a plurality of operation sections. Furthermore, a plurality of suction ports and a plurality of drain ports, associated with respective operation sections, communicate with each other. --.

On page 8 of the specification:

line 22, "seal ring 33" has been changed to -- seal ring 41 --. The Amendment to the Specification has been entered to correct a typographical error.

Allowable Subject Matter

Claims 1-10 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art fails to disclose or render obvious the claimed combination including: a roller being formed with a plurality of helical groove; a plurality of helical blades fitted to the helical grooves and disposed between the inner surface of the cylinder and outer periphery surface of the roller; at least one seal ring groove formed on the outer peripheral surface of the roller at a portion between respective helical grooves; at least one seal ring fitted the seal ring groove and dividing the inner space-cylinder into a plurality of operation sections; and a plurality of suction and drain ports formed to the respective operation sections so that the corresponding suction and drain ports are communicated with each other.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art

The IDS (PTO-1449) filed on March 16, 2004 has been considered. An initialized copy is attached hereto.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of six patents.

Hayano et al. (Patent Number 6,186,759) disclose a helical blade type compressor and a refrigeration cycle apparatus using the same.

Fujiwara (Patent Number 6,589,026) discloses fluid machinery having a helical mechanism with through holes for ventilation.

Kumazawa et al. (Publication Number JP 03-145592) disclose a helical compressor having a thrust force being generated in the piston from a compressor unit to the pressure closing chamber.

Fujiwara et al. (Publication Number JP 07-027071) disclose a fluid compressor performing an operation of low noise further with high reliability.

Fujiwara et al. (Publication Number JP 2003-097464) disclose a helical compressor having helical blade whose thickness along radial direction is kept greater than or equal to helical groove depth.

Hirayama et al. (Publication Number JP 2004-092518) disclose a horizontal type helical compressor having a cylinder and bearing outer surface are exposed and a base for mounting the housing being provided at lower surface of bearing.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 703-308-6434. The examiner can normally be reached on Monday-Friday 8:30am- 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E Denion can be reached on 703-308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Theresa Trieu
Patent Examiner
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